Date=15/10/2020
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Subject ⇒Html Dom Manipulation

IN PREVIOUS LECTURE **(QUICK RECAP)** **Date-09/10/2020**	**In Today's Lecture (Overview)**
• JavaScript Closures • Global Variables • JavaScript Nested Functions • Questions For Self Practice / Assignment/CC For the day • Resources For the Lecture • Youtube Tutorial	• The HTML DOM (Document Object Model) • What is the HTML DOM? • The getElementById Method • The innerHTML Property • Finding HTML Elements • Changing HTML Elements • Adding and Deleting Elements • Finding HTML Objects • MCQ • Questions For Self practice / CC For The Day • Resource For The Lecture • Youtube Tutorial

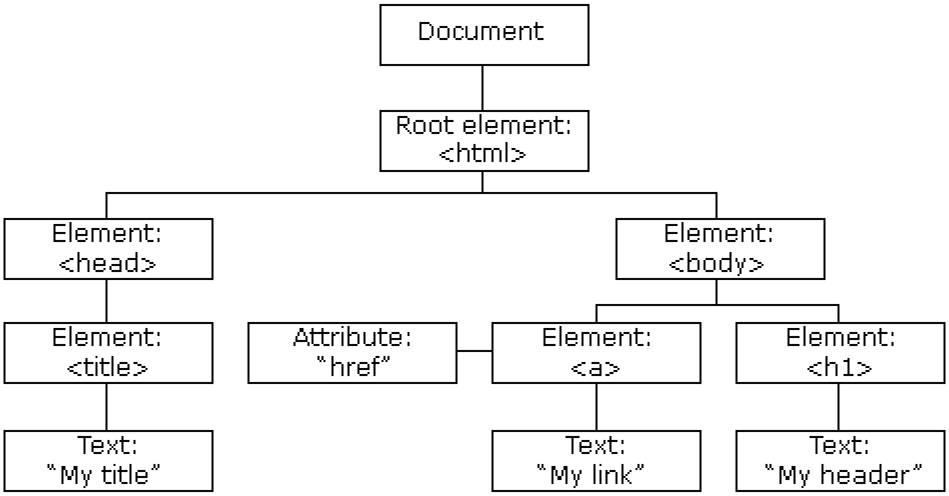
With the HTML DOM, JavaScript can access and change all the elements of an HTML document.

The HTML DOM (Document Object Model)

When a web page is loaded, the browser creates a Document Object Model of the page.

The HTML DOM model is constructed as a tree of Objects:

The HTML DOM Tree of Objects



With the object model, JavaScript gets all the power it needs to create dynamic HTML:

- JavaScript can change all the HTML elements in the page
- JavaScript can change all the HTML attributes in the page
- JavaScript can change all the CSS styles in the page
- JavaScript can remove existing HTML elements and attributes
- JavaScript can add new HTML elements and attributes
- JavaScript can react to all existing HTML events in the page
- JavaScript can create new HTML events in the page

What is the DOM?

The DOM is a W3C (World Wide Web Consortium) standard.

The DOM defines a standard for accessing documents:

"The W3C Document Object Model (DOM) is a platform and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure, and style of a document."

The W3C DOM standard is separated into 3 different parts:

- Core DOM - standard model for all document types
- XML DOM - standard model for XML documents
- HTML DOM - standard model for HTML documents

What is the HTML DOM?

The HTML DOM is a standard object model and programming interface for HTML. It defines:

- The HTML elements as objects
- The properties of all HTML elements
- The methods to access all HTML elements
- The events for all HTML elements

In other words: The HTML DOM is a standard for how to get, change, add, or delete HTML elements.

The HTML DOM can be accessed with JavaScript (and with other programming languages).

In the DOM, all HTML elements are defined as objects.

The programming interface is the properties and methods of each object.

A property is a value that you can get or set (like changing the content of an HTML element).

A method is an action you can do (like add or deleting an HTML element).

Example

The following example changes the content (the `innerHTML`) of the `<p>` element with `id="demo"`:

```
<html>
<body>

<p id="demo"></p>

<script>
document.getElementById("demo").innerHTML = "Hello World!";
</script>
```

```
</body>
</html>
```

The getElementById Method

The most common way to access an HTML element is to use the `id` of the element.

In the example above the `getElementById` method used `id="demo"` to find the element.

The innerHTML Property

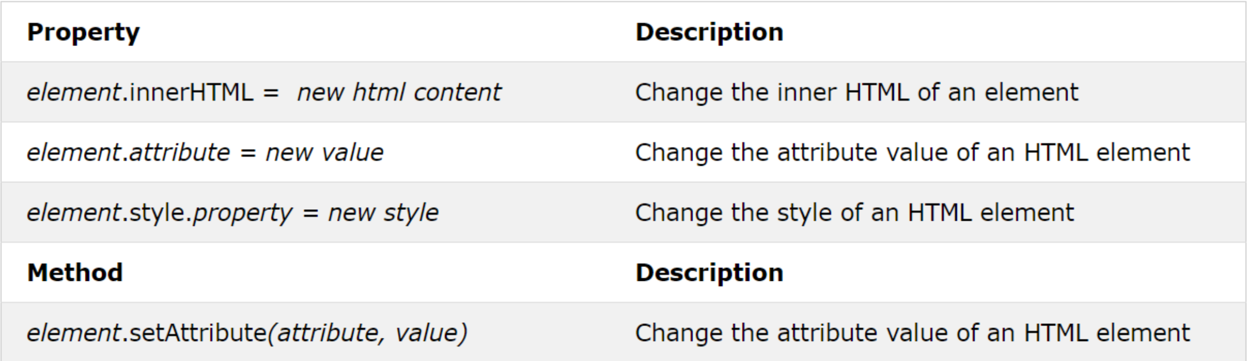
The easiest way to get the content of an element is by using the `innerHTML` property.

The `innerHTML` property is useful for getting or replacing the content of HTML elements.

Finding HTML Elements

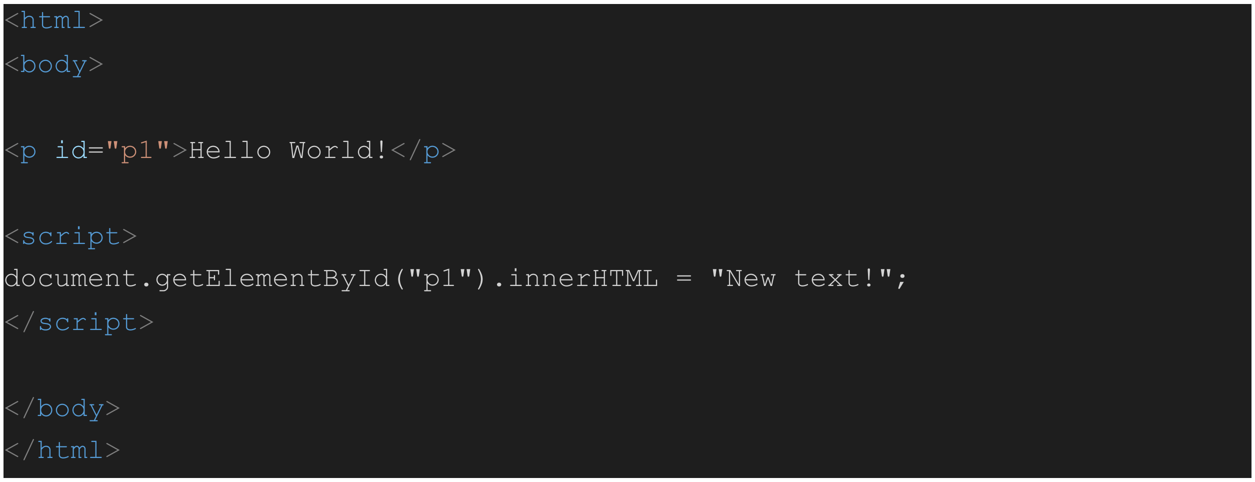
Method	**Description**
document.getElementById(*id*)	Find an element by element id
document.getElementsByTagName(*name*)	Find elements by tag name
document.getElementsByClassName(*name*)	Find elements by class name

Changing HTML Elements



Property	**Description**
element.innerHTML = *new html content*	Change the inner HTML of an element
element.*attribute* = *new value*	Change the attribute value of an HTML element
element.style.*property* = *new style*	Change the style of an HTML element
Method	**Description**
element.setAttribute*(attribute, value)*	Change the attribute value of an HTML element

Example



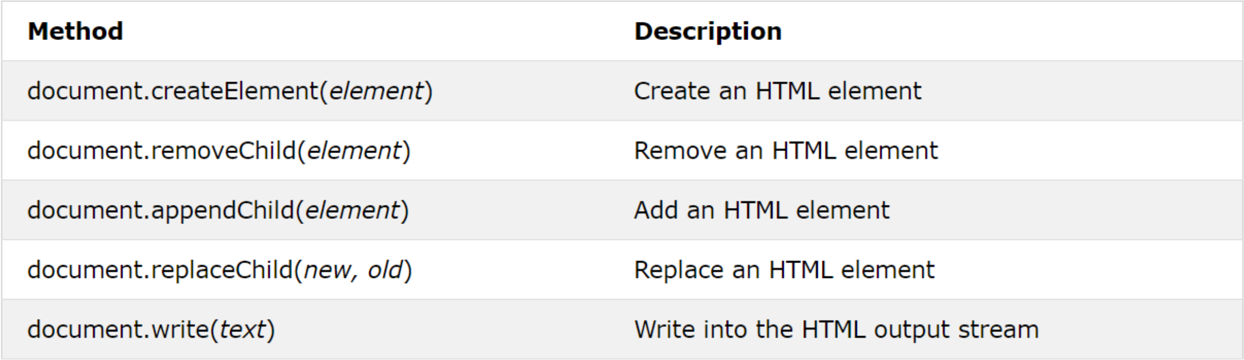
```
<html>
<body>

<p id="p1">Hello World!</p>

<script>
document.getElementById("p1").innerHTML = "New text!";
</script>

</body>
</html>
```

Adding and Deleting Elements

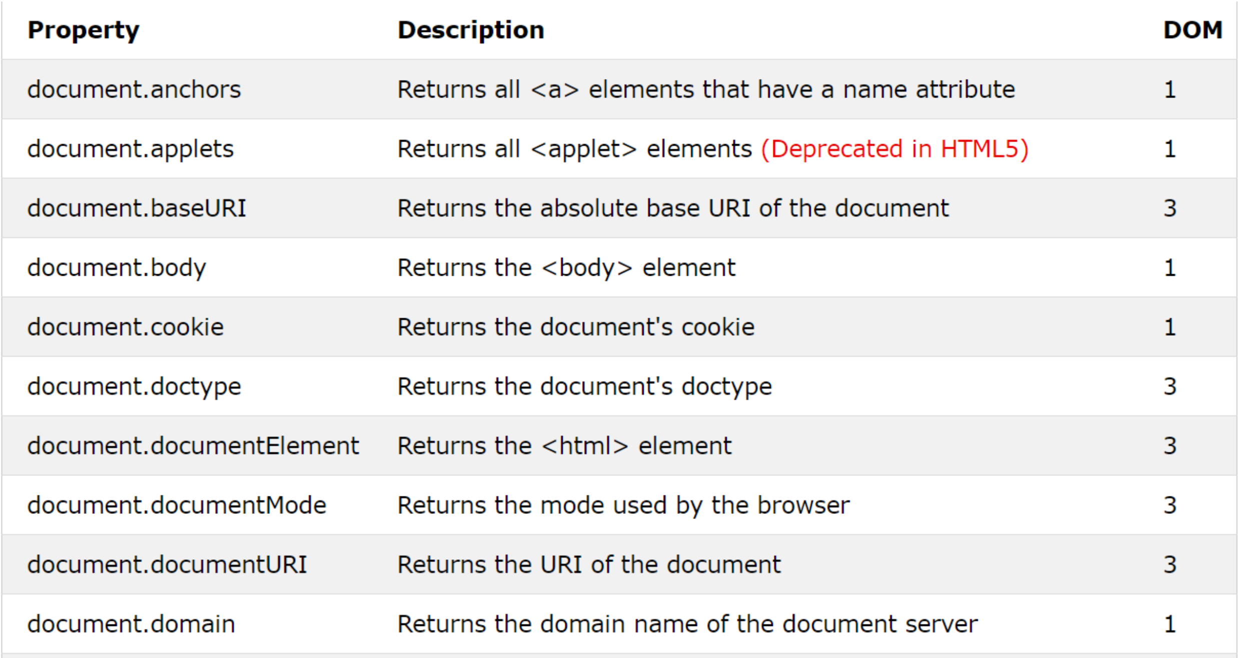


Method	Description
document.createElement(*element*)	Create an HTML element
document.removeChild(*element*)	Remove an HTML element
document.appendChild(*element*)	Add an HTML element
document.replaceChild(*new, old*)	Replace an HTML element
document.write(*text*)	Write into the HTML output stream

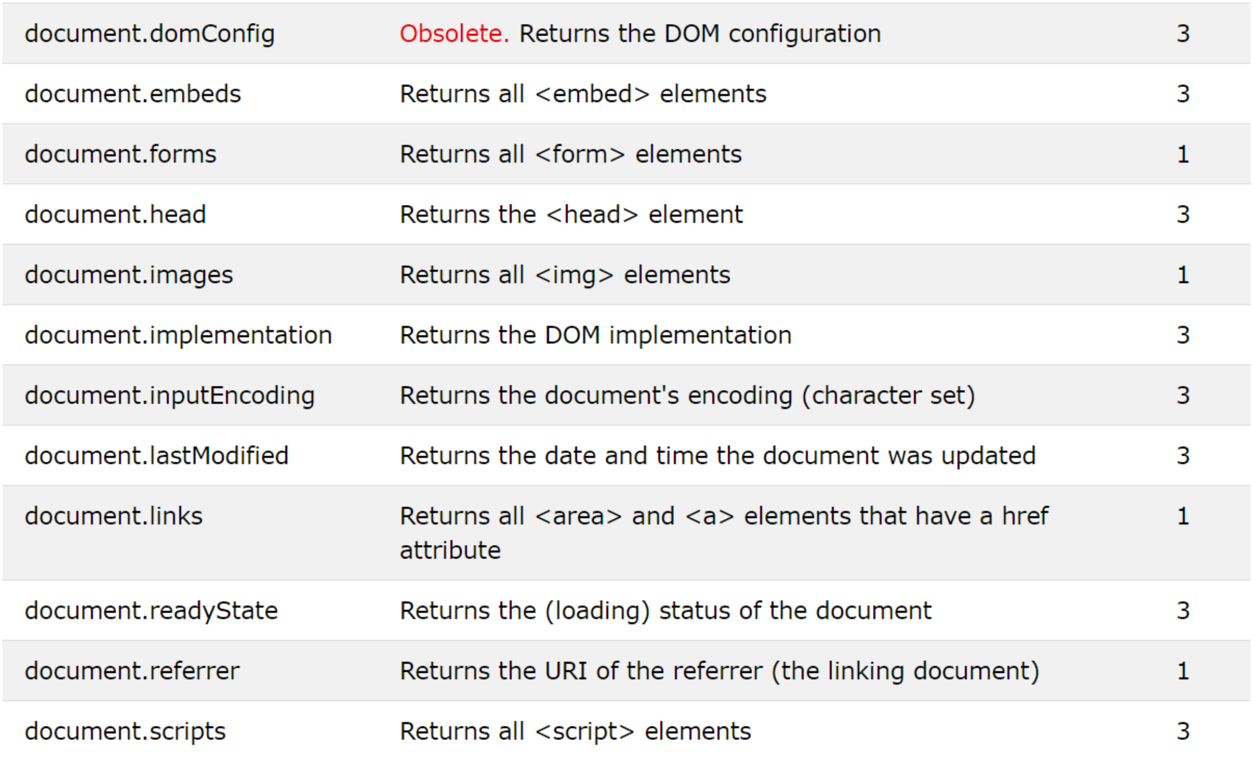
Finding HTML Objects

The first HTML DOM Level 1 (1998), defined 11 HTML objects, object collections, and properties. These are still valid in HTML5.

Later, in HTML DOM Level 3, more objects, collections, and properties were added.



Property	Description	DOM
document.anchors	Returns all <a> elements that have a name attribute	1
document.applets	Returns all <applet> elements (Deprecated in HTML5)	1
document.baseURI	Returns the absolute base URI of the document	3
document.body	Returns the <body> element	1
document.cookie	Returns the document's cookie	1
document.doctype	Returns the document's doctype	3
document.documentElement	Returns the <html> element	3
document.documentMode	Returns the mode used by the browser	3
document.documentURI	Returns the URI of the document	3
document.domain	Returns the domain name of the document server	1



document.domConfig	Obsolete. Returns the DOM configuration	3
document.embeds	Returns all <embed> elements	3
document.forms	Returns all <form> elements	1
document.head	Returns the <head> element	3
document.images	Returns all <img> elements	1
document.implementation	Returns the DOM implementation	3
document.inputEncoding	Returns the document's encoding (character set)	3
document.lastModified	Returns the date and time the document was updated	3
document.links	Returns all <area> and <a> elements that have a href attribute	1
document.readyState	Returns the (loading) status of the document	3
document.referrer	Returns the URI of the referrer (the linking document)	1
document.scripts	Returns all <script> elements	3

MCQ

1.**Which method can be used as a selector?**

A. querySelector()

B. querySelectorAll()

C. getElementById()

Questions For Self practice / CC For The Day

https://au-assignment.s3.amazonaws.com/cc-b572c30e-e138-4d57-975f-64bbb3aa9efd.pdf

Resource For The Lecture

https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Client-side_web_APIs/Manipulating_documents

Youtube Tutorial

https://www.youtube.com/watch?v=wiozYyXQEVk